

REMARKS

In response to the Notice to Comply with Requirements for Patent Applications Containing Nucleotide Sequence and/or Amino Acid Sequence Disclosures dated March 31, 2005 (copy enclosed), Applicants have amended the specification to include the required substitute Sequence Listing. A substitute computer readable form (CRF) copy of the enclosed substitute Sequence Listing and a Statement As Required Under 37 C.F.R. § 1.825(a) and (b) And Statement As Required Under 37 C.F.R. § 1.821(g) are also submitted herewith. No new matter is introduced by this amendment.

Should the Examiner have any questions or comments regarding this matter, a telephone call to the undersigned Applicants' representative is earnestly solicited.

Respectfully submitted,



Mark B. Wilson
Reg. No. 37,259
Agent for Applicants

FULBRIGHT & JAWORSKI L.L.P.
600 Congress Avenue, Suite 2400
Austin, Texas 78701
512.536.3035 (voice)
512.536.4598 (fax)

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APPENDIX A



SEQUENCE LISTING

<110> SARCABAL, PATRICIA
CROUX, CHRISTIAN
SOUCAILLE, PHILIPPE

<120> METHOD FOR PREPARING 1,3-PROPANEDIOL BY A RECOMBINANT
MICRO-ORGANISM IN THE ABSENCE OF COENZYME B12 OR ONE OF
ITS PRECURSORS

<130> CHEP:004US

<140> 10/043,639

<141> 2002-01-09

<150> PCT/FR00/01981

<151> 2000-07-07

<150> FR 99/08939

<151> 1999-07-09

<160> 14

<170> PatentIn Ver. 2.1

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Thr	Leu	Glu	Asp	Ala	Arg	Asp	Tyr	Gly	Ile	Ile	Gly	Cys	Val	Glu	Pro	420	425	430
Gln	Lys	Pro	Gly	Lys	Thr	Glu	Gly	Trp	His	Asp	Ser	Ala	Phe	Phe	Asn	435	440	445
Leu	Ala	Arg	Ile	Val	Glu	Leu	Thr	Ile	Asn	Ser	Gly	Phe	Asp	Lys	Asn	450	455	460
Lys	Gln	Ile	Gly	Pro	Lys	Thr	Gln	Asn	Phe	Glu	Glu	Met	Lys	Ser	Phe	465	470	475
Asp	Glu	Phe	Met	Lys	Ala	Tyr	Lys	Ala	Gln	Met	Glu	Tyr	Phe	Val	Lys	485	490	495
His	Met	Cys	Cys	Ala	Asp	Asn	Cys	Ile	Asp	Ile	Ala	His	Ala	Glu	Arg	500	505	510
Ala	Pro	Leu	Pro	Phe	Leu	Ser	Ser	Met	Val	Asp	Asn	Cys	Ile	Gly	Lys	515	520	525
Gly	Lys	Ser	Leu	Gln	Asp	Gly	Gly	Ala	Glu	Tyr	Asn	Phe	Ser	Gly	Pro	530	535	540
Gln	Gly	Val	Gly	Val	Ala	Asn	Ile	Gly	Asp	Ser	Leu	Val	Ala	Val	Lys	545	550	555
Lys	Ile	Val	Phe	Asp	Glu	Asn	Lys	Ile	Thr	Pro	Ser	Glu	Leu	Lys	Lys	565	570	575
Thr	Leu	Asn	Asn	Asp	Phe	Lys	Asn	Ser	Glu	Glu	Ile	Gln	Ala	Leu	Leu	580	585	590

Lys Asn Ala Pro Lys Phe Gly Asn Asp Ile Asp Glu Val Asp Asn Leu
 595 600 605
 Ala Arg Glu Gly Ala Leu Val Tyr Cys Arg Glu Val Asn Lys Tyr Thr
 610 615 620
 Asn Pro Arg Gly Gly Asn Phe Gln Pro Gly Leu Tyr Pro Ser Ser Ile
 625 630 635 640
 Asn Val Tyr Phe Gly Ser Leu Thr Gly Ala Thr Pro Asp Gly Arg Lys
 645 650 655
 Ser Gly Gln Pro Leu Ala Asp Gly Val Ser Pro Ser Arg Gly Cys Asp
 660 665 670
 Val Ser Gly Pro Thr Ala Ala Cys Asn Ser Val Ser Lys Leu Asp His
 675 680 685
 Phe Ile Ala Ser Asn Gly Thr Leu Phe Asn Gln Lys Phe His Pro Ser
 690 695 700
 Ala Leu Lys Gly Asp Asn Gly Leu Met Asn Leu Ser Ser Leu Ile Arg
 705 710 715 720
 Ser Tyr Phe Asp Gln Lys Gly Phe His Val Gln Phe Asn Val Ile Asp
 725 730 735
 Lys Lys Ile Leu Leu Ala Ala Gln Lys Asn Pro Glu Lys Tyr Gln Asp
 740 745 750
 Leu Ile Val Arg Val Ala Gly Tyr Ser Ala Gln Phe Ile Ser Leu Asp
 755 760 765
 Lys Ser Ile Gln Asn Asp Ile Ile Ala Arg Thr Glu His Val Met
 770 775 780

<210> 7

<211> 304

<212> PRT

<213> Clostridium butyricum

<400> 7

Met Ser Lys Glu Ile Lys Gly Val Leu Phe Asn Ile Gln Lys Phe Ser
 1 5 10 15
 Leu His Asp Gly Pro Gly Ile Arg Thr Ile Val Phe Phe Lys Gly Cys
 20 25 30
 Ser Met Ser Cys Leu Trp Cys Ser Asn Pro Glu Ser Gln Asp Ile Lys
 35 40 45
 Pro Gln Val Met Phe Asn Lys Asn Leu Cys Thr Lys Cys Gly Arg Cys
 50 55 60
 Lys Ser Gln Cys Lys Ser Ala Gly Ile Asp Met Asn Ser Glu Tyr Arg
 65 70 75 80

Ile	Asp	Lys	Ser	Lys	Cys	Thr	Glu	Cys	Thr	Lys	Cys	Val	Asp	Asn	Cys	
				85					90					95		
Leu	Ser	Gly	Ala	Leu	Val	Ile	Glu	Gly	Arg	Asn	Tyr	Ser	Val	Glu	Asp	
			100					105					110			
Val	Ile	Lys	Glu	Leu	Lys	Lys	Asp	Ser	Val	Gln	Tyr	Arg	Arg	Ser	Asn	
		115					120					125				
Gly	Gly	Ile	Thr	Leu	Ser	Gly	Gly	Glu	Val	Leu	Leu	Gln	Pro	Asp	Phe	
	130					135					140					
Ala	Val	Glu	Leu	Leu	Lys	Glu	Cys	Lys	Ser	Tyr	Gly	Trp	His	Thr	Ala	
145					150					155					160	
Ile	Glu	Thr	Ala	Met	Tyr	Val	Asn	Ser	Glu	Ser	Val	Lys	Lys	Val	Ile	
				165					170					175		
Pro	Tyr	Ile	Asp	Leu	Ala	Met	Ile	Asp	Ile	Lys	Ser	Met	Asn	Asp	Glu	
			180					185					190			
Ile	His	Arg	Lys	Phe	Thr	Gly	Val	Ser	Asn	Glu	Ile	Ile	Leu	Gln	Asn	
		195				200						205				
Ile	Lys	Leu	Ser	Asp	Glu	Leu	Ala	Lys	Glu	Ile	Ile	Ile	Arg	Ile	Pro	
	210					215					220					
Val	Ile	Glu	Gly	Phe	Asn	Ala	Asp	Leu	Gln	Ser	Ile	Gly	Ala	Ile	Ala	
225					230					235					240	
Gln	Phe	Ser	Lys	Ser	Leu	Thr	Asn	Leu	Lys	Arg	Ile	Asp	Leu	Leu	Pro	
			245						250				255			
Tyr	His	Asn	Tyr	Gly	Glu	Asn	Lys	Tyr	Gln	Ala	Ile	Gly	Arg	Glu	Tyr	
		260						265					270			
Ser	Leu	Lys	Glu	Leu	Lys	Ser	Pro	Ser	Lys	Asp	Lys	Met	Glu	Arg	Leu	
		275					280					285				
Lys	Ala	Leu	Val	Glu	Ile	Met	Gly	Ile	Pro	Cys	Thr	Ile	Gly	Ala	Glu	
	290					295					300					

<210> 8
 <211> 385
 <212> PRT
 <213> Clostridium butyricum

<400> 8
 Met Arg Met Tyr Asp Tyr Leu Val Pro Ser Val Asn Phe Met Gly Ala
 1 5 10 15

Asn Ser Val Ser Val Val Gly Glu Arg Cys Lys Ile Leu Gly Gly Lys

20					25					30						
Lys	Ala	Leu	Ile	Val	Thr	Asp	Lys	Phe	Leu	Lys	Asp	Met	Glu	Gly	Gly	
35					40					45						
Ala	Val	Glu	Leu	Thr	Val	Lys	Tyr	Leu	Lys	Glu	Ala	Gly	Leu	Asp	Val	
50					55					60						
Val	Tyr	Tyr	Asp	Gly	Val	Glu	Pro	Asn	Pro	Lys	Asp	Val	Asn	Val	Ile	
65					70					75					80	
Glu	Gly	Leu	Lys	Ile	Phe	Lys	Glu	Glu	Asn	Cys	Asp	Met	Ile	Val	Thr	
85					90					95						
Val	Gly	Gly	Gly	Ser	Ser	His	Asp	Cys	Gly	Lys	Gly	Ile	Gly	Ile	Ala	
100					105					110						
Ala	Thr	His	Glu	Gly	Asp	Leu	Tyr	Asp	Tyr	Ala	Gly	Ile	Glu	Thr	Leu	
115					120					125						
Val	Asn	Pro	Leu	Pro	Pro	Ile	Val	Ala	Val	Asn	Thr	Thr	Ala	Gly	Thr	
130					135					140						
Ala	Ser	Glu	Leu	Thr	Arg	His	Cys	Val	Leu	Thr	Asn	Thr	Lys	Lys	Lys	
145					150					155					160	
Ile	Lys	Phe	Val	Ile	Val	Ser	Trp	Arg	Asn	Leu	Pro	Leu	Val	Ser	Ile	
165					170					175						
Asn	Asp	Pro	Met	Leu	Met	Val	Lys	Lys	Pro	Ala	Gly	Leu	Thr	Ala	Ala	
180					185					190						
Thr	Gly	Met	Asp	Ala	Leu	Thr	His	Ala	Ile	Glu	Ala	Tyr	Val	Ser	Lys	
195					200					205						
Asp	Ala	Asn	Pro	Val	Thr	Asp	Ala	Ser	Ala	Ile	Gln	Ala	Ile	Lys	Leu	
210					215					220						
Ile	Ser	Gln	Asn	Leu	Arg	Gln	Ala	Val	Ala	Leu	Gly	Glu	Asn	Leu	Glu	
225					230					235					240	
Ala	Arg	Glu	Asn	Met	Ala	Tyr	Ala	Ser	Leu	Leu	Ala	Gly	Met	Ala	Phe	
245					250					255						
Asn	Asn	Ala	Asn	Leu	Gly	Tyr	Val	His	Ala	Met	Ala	His	Gln	Leu	Gly	
260					265					270						
Gly	Leu	Tyr	Asp	Met	Ala	His	Gly	Val	Ala	Asn	Ala	Met	Leu	Leu	Pro	
275					280					285						
His	Val	Glu	Arg	Tyr	Asn	Met	Leu	Ser	Asn	Pro	Lys	Lys	Phe	Ala	Asp	
290					295					300						
Ile	Ala	Glu	Phe	Met	Gly	Glu	Asn	Ile	Ser	Gly	Leu	Ser	Val	Met	Glu	
305					310					315					320	
Ala	Ala	Glu	Lys	Ala	Ile	Asn	Ala	Met	Phe	Arg	Leu	Ser	Glu	Asp	Val	

	325		330		335
Gly Ile Pro Lys Ser Leu Lys Glu Met Gly Val Lys Gln Glu Asp Phe					
	340		345		350
Glu His Met Ala Glu Leu Ala Leu Leu Asp Gly Asn Ala Phe Ser Asn					
	355		360		365
Pro Arg Lys Gly Asn Ala Lys Asp Ile Ile Asn Ile Phe Lys Ala Ala					
	370		375		380
Tyr					
385					

<210> 9
 <211> 35
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 Primer

<400> 9
 cgcgatccg tgattggagg agtaaaaatg ataag 35

<210> 10
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 Primer

<400> 10
 tccccgggg gaatccttta aatagtatta attaataagc 40

<210> 11
 <211> 34
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Synthetic
 Primer

<400> 11
 gttaccggg gtcctgcag ctcgactttt taac 34

<210> 12
 <211> 34
 <212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Primer

<400> 12

tttcacccgg gaaacagcta tgaccatgat tacg

34

<210> 13

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Primer

<400> 13

ttggatccag tatctataaa tgatccaatg c

31

<210> 14

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
Primer

<400> 14

ttagatcttt taaatagtat taattaataa gcagcc

36